

## Curriculum Vitae

**Name:** Myung Hee Park  
**Date:** April 2000  
**Date and Place of Birth:** December 16, 1949; Taegu, Korea  
**Citizenship:** United States

### Education:

1972 B.S., Seoul National University, Seoul, Korea: chemistry,  
1976 Ph.D., Brown University, Providence, RI: chemistry,

### Brief Chronology of Employment:

1996-present Research Chemist, GS-14 Oral and Pharyngeal Cancer Branch, NIDR, NIH  
1989-1996 Research Chemist, GS-13 Laboratory of Cellular Development and Oncology, NIDR, NIH  
1984-1989 Senior Staff Fellow, Laboratory of Oral Biology and Physiology, NIDR, NIH  
1982-1984 Staff Fellow, Laboratory of Biochemistry, NIDR, NIH  
1979-1982 Visiting Fellow, Laboratory of Biochemistry, NIDR, NIH  
1976-1978 Research Associate, Department of Biology, Massachusetts Institute of Technology

### Societies:

The American Society for Cell Biology  
American Society for Biochemistry and Molecular Biology  
Korean Scientists and Engineers Association  
Society for Biomedical Research

### Awards and Other Special Scientific Recognition:

1985 Ad Hoc Review Member, Site Visit, University of Arizona  
1987 Ad Hoc Review Member, Site Visit, Harvard Medical School  
1994 Grant Review Board Member, Korean Science Foundation  
1994 NIH Merit Award

### Extramural Activities:

1995-Present Treasurer, The Society of Biomedical Research  
1995-Present Annual Meeting Organizing Committee, The Society of Biomedical Research  
1997-1998 Editorial Board Member: Journal of Biomedical Research  
1999- Present Editorial Board Member: Archives of Pharmacal Research

**Intramural Activities:**

2000	President, NIH Korean Scientist Association
1999	Vice President, NIH Korean Scientist Association
1997-1999	NIDCR Animal Care and Use Committee
1998	BSC Report Format Committee
1997-1998	NIDR Equipment Committee
1997	DIR Seminar Committee
1997	NIDR Discretionary Funds Committee
1993-1994	NIDR Visiting Scholars Committee
1992-1996	NIDR Safety Committee

**Invited Lectures and Symposium Presentations:**

1983	Pennsylvania State University, College of Medicine, Hershey, PA
1983	Gordon Conference on Polyamines, New London, NH
1984	FASEB Meeting, Mini-symposium on Polyamines, St. Louis, MO
1986	Georgetown University, Medical School, Washington, DC
1988	University of Rome, Rome, Italy
1988	International Symposium on Polyamines in Biochemical and Clinical Research, University of Naples, Naples, Italy
1989	Gordon Conference on Polyamines, Newport, RI
1989	Howard University, Washington, DC
1990	Seoul National University, Seoul, Korea
1990	International Symposium on Polyamines in Molecular and Medical Biology, Kyoto, Japan
1993	Merck Sharp & Dohme Research Laboratory, WestPoint, PA
1993	University of Maryland, School of Pharmacy, Baltimore, MD
1994	Meeting of the Society of Biomedical Research
1994	Eisai Research Institute, Andover, MA
1995	Korean Green Cross Corporation, Yongin, Korea
1995	Korean National Institute of Health, Seoul, Korea
1995	Schering-Plough Institute, Kenilworth, NJ
1995	Sandoz Research Institute, Vienna, Austria
1995	International Congress on Amino Acids, Vienna, Austria
1995	Gordon Conference on Polyamines, Meriden NH
1996	Workshop on eIF-5A Function, Genetic Therapy, Inc. Gaithersburg, MD
1996	Tokyo International Symposium on Polyamines, Tokyo, Japan
1996	Tokyo Medical and Dental University, Tokyo, Japan
1996	Seoul National University, Seoul, Korea
1996	Duk-Sung Women's College, Seoul Korea
1996	LBG, NIDDK, NIH, Bethesda MD
1996	LMCB, NIDDK, NIH, Bethesda, MD
1998	Key Myung University Medical School, Taegu, Korea

1998	Kangnung National University College of Dentistry, Kangnung, Korea
1998	Cancer Research Institute, Catholic University, Seoul, Korea
1999	Gordon Research Conference on Polyamines, Oxford, United Kingdom

### Patents:

Jakus, J., Park, M.H., Wolff, E.C., and Folk, J.E. (1994) Compositions and methods for inhibiting deoxyhypusine synthase and the growth of cells. Patent No. 5,344,846, registered September 6, 1994.

### Publications:

1. Lusk, J.E. and Park, M.H. Phospholipase activity plays no role on the action of colicin K. *Biochim. Biophys. Acta* **394**:129-134, 1975.
2. Park, M.H., Wong, B.B, and Lusk, J.E. Mutants in three genes affecting transport of magnesium in *Escherichia coli*: Genetics and physiology. *J. Bacteriology* **126**:1096-1103, 1976.
3. Park, M.H., Berg, W.H. and Buchanan, J.M. The formation of plasminogen activator during viral transformation of chick embryo fibroblasts. *Chem. Phys. of Human Plasma Proteins*, 315-328, 1979.
4. Folk, J.E., Park, M.H., Chung S.I., Schrode, J., Lester, E.P. and Herbert L. Cooper. Polyamines as physiological substrates for transglutaminases. *J. Biol. Chem.* **255**:3695-3700, 1980.
5. Park, M.H., Cooper, H.L. and Folk, J.E. Identification of hypusine, an unusual amino acid, in a protein from human lymphocytes and of spermidine as its biosynthetic precursor. *Proc. Natl. Acad. Sci. USA* **78**:2869-2873, 1981.
6. Park, M.H., Cooper, H.L. and Folk, J.E. The biosynthesis of protein-bound hypusine [N<sup>-</sup>-(4-amino-2-hydroxybutyl)lysine]: lysine as the amino acid precursor and the intermediate role of deoxyhypusine [N<sup>-</sup>-(4-aminobutyl)lysine]. *J. Biol. Chem.* **257**:7217-7222, 1982.
7. Cooper, H.L., Park, M.H. and Folk, J.E. Posttranslational formation of hypusine in a single major protein occurs generally in growing cells and is associated with activation of lymphocyte growth. *Cell* **29**:791-797, 1982.
8. Park, M.H., Cooper, H.L. and Folk, J.E. Chromatographic identification of hypusine [N<sup>-</sup>-(4-amino-2-hydroxybutyl)lysine] and deoxyhypusine [N<sup>-</sup>-(4-aminobutyl)lysine]. *Methods in Enzymology* **94**: 458-462, 1983.

9. Cooper, H.L., Park, M.H., Folk, J.E., Safer B. and Braverman, R. Identification of the hypusine-containing protein Hy<sup>+</sup> as translation initiation factor eIF-4D. *Proc. Natl. Acad. Sci. USA* **80**:1854-1857, 1983.
10. Cooper, H.L., Park, M.H. and Folk, J.E. Hypusine formation: A unique posttranslational modification of translation initiation factor eIF-4D. *Methods in Enzymology* **106**:344-351, 1984.
11. Park, M.H., Chung, S.I., Cooper, H.L. and Folk, J.E. The mammalian hypusine-containing protein, eIF-4D. structural homology of this protein from several species. *J. Biol. Chem.* **259**:4563-4565, 1984.
12. Park, M.H., Liberato, D.J., Yergey A.L., and Folk, J.E. The biosynthesis of hypusine [N-(4-amino-2-hydroxybutyl)lysine]: alignment of the butylamine segment and source of the secondary amino nitrogen. *J. Biol. Chem.* **259**:12123- 12127, 1984.
13. Abbruzzese, A., Park, M.H. and Folk, J.E. Deoxyhypusine hydroxylase from rat testis: partial purification and characterization. *J. Biol. Chem.* **261**:3085-3089, 1986.
14. Abbruzzese, A., Park, M.H. and Folk, J.E. Indirect assays for deoxyhypusine hydroxylase using dual-label ratio changes and oxidative release of radioactivity. *Anal. Biochem.* **154**: 664-670, 1986.
15. Park, M.H. and Folk, J.E. Biosynthetic labeling of hypusine in mammalian cells: carbon-hydrogen bond fissions revealed by dual-labeling. *J. Biol. Chem.* **261**:14108-14111, 1986.
16. Park, M.H., Liu, T.Y., Neece, S.H. and Swiggard, W.J. Eukaryotic initiation factor 4D: purification from human red blood cells and the sequence of amino acids around its single hypusine residue. *J. Biol. Chem.* **261**:14515-14519, 1986.
17. Abbruzzese, A., Park, M.H. and Folk, J.E. Hypusine biosynthesis: studies on deoxyhypusine hydroxylase. *Italian J. Biochem.* **36**: 45A-48A, 1987.
18. Park, M.H. Regulation of biosynthesis of hypusine in Chinese hamster ovary cells: evidence for eIF-4D precursor polypeptides. *J. Biol. Chem.* **262**:12730-12734, 1987.
19. Park, M.H., Abbruzzese, A. and Folk, J.E. Post-translational formation of hypusine: biogenesis of translation initiation factor eIF-4D. In *Advances in Post-translational Modifications of Protein and Aging*. Edited by V. Zappia, P. Galletti, R. Porta and F. Wold. Plenum, pp 633-640, 1988.

20. Abbruzzese, A., Liguori, V., Isernia, T. and Park, M.H. Inhibition of deoxyhypusine hydroxylase by polyamines. *Italian J. Biochem.* **37**:187A-189A, 1988.
21. Park, M.H. Identification of an eukaryotic initiation factor 4D precursor in spermidine-depleted Chinese hamster ovary cells. *J. Biol. Chem.* **263**:7447-7449, 1988.
22. Park, M.H. and Wolff, E.C. Cell-free synthesis of deoxyhypusine: separation of protein substrate and enzyme, and identification of 1,3-diaminopropane as a product of spermidine cleavage. *J. Biol. Chem.* **263**:15264-15269, 1988.
23. Park, M.H., Wolff, E.C., Abbruzzese, A. and Folk, J.E. Biosynthesis of hypusine in eIF-4D precursors. In *Progress in Polyamine Research* (Edited by V. Zappia, and A.E. Pegg Plenum, pp. 435-447, 1998.
24. Abbruzzese, A., Liguori V. and Park, M.H. Deoxyhypusine hydroxylase. In *Progress in Polyamine Research*. Edited by V. Zappia and A.E. Pegg, Plenum, pp. 459-466.
25. Abbruzzese, A., Park, M.H., Beninati, S. and Folk, J.E. Inhibition of deoxyhypusine hydroxylase by polyamines and by a deoxyhypusine peptide. *Biochim.Biophys. Acta* **997**:248-255, 1989.
26. Park, M.H. The essential role of hypusine in eukaryotic translation initiation factor 4D (eIF-4D): purification of eIF-4D and its precursors and comparison of their activities. *J. Biol. Chem.* **264**:18531-18535, 1989.
27. Wolff, E.C., Park, M.H. and Folk, J.E. Cleavage of spermidine as the first step in deoxyhypusine synthesis. *J. Biol. Chem.* **265**: 4793-3799, 1990.
28. Abbruzzese, A., Hanauske-Abel, H.M., Park, M.H., Henke S. and Folk, J.E. The active site of deoxyhypusyl hydroxylase: use of catecholpeptides and their component chelator and peptide moieties as molecular probes. *Biochim. Biophys. Acta* **1077**:159-166, 1991.
29. Chung, S.I., Park, M.H, Folk, J.E. and Lewis, M.S. Eukaryotic initiation factor 5A: the molecular form of the hypusine-containing protein from human erythrocytes. *Biochim. Biophys. Acta* **1076**:448-451, 1991.
30. Park, M.H., Wolff, E.C., Smit-McBride, Z., Hershey, J.W.B. and Folk, J.E. Comparison of the activities of variant forms of eIF-4D: the requirement for hypusine or deoxyhypusine. *J. Biol. Chem.* **266**:7988-7994, 1991.
31. Wolff, E.C., Kinzy, T.G., Merrick, W.C. and Park, M.H. Two isoforms of eIF-5A in chick embryo: isolation, activity and comparison of sequences of the hypusine-containing proteins. *J. Biol. Chem.* **267**:6107-6113, 1992.

32. Park, M.H., Wolff E.C., and Folk J.E. Review. Hypusine: its post-translational formation in eukaryotic initiation factor 5A and its potential role in cellular regulation. *BioFactors* **4**:95-104, 1993.
33. Jakus, J., Wolff, E.C., Park, M.H., and Folk, J.E. Features of the spermidine-binding site of deoxyhypusine synthase as derived from inhibition studies: effective inhibition by *bis*- and *mono*-guanylated diamines and polyamines. *J. Biol. Chem.* **268**:13151-13159, 1993.
34. Rinaudo, M.S., Joe, Y.A., and Park, M.H. Cloning and sequencing of a chick embryo cDNA encoding the 20-kDa hypusine-containing protein, eIF-5A. *Gene* **137**:303-307, 1993.
35. Park, M.H., Wolff, E.C. and Folk, J.E. Review. Is hypusine essential for eukaryotic cell proliferation? *Trends in Biochemical Sciences* **18**:475-479, 1993.
36. Hanauske-Abel, H.M., Park, M.H., Hanauske, A.-R., Popowicz, A.M., Lalande, M., and Folk, J.E. Inhibition of G1-S transition by inhibitors of deoxyhypusine hydroxylation. *Biochem. Biophys. Acta.* **1221**: 115-124, 1994.
37. Joe, Y.A. and Park, M.H. Structural features of the eIF-5A precursor required for post-translational synthesis of deoxyhypusine. *J. Biol. Chem.* **269**:25916-25921, 1994.
38. Park, M.H., Wolff, E.C., Lee, Y.B. and Folk, J.E. Antiproliferative effects of inhibitors of deoxyhypusine synthase: inhibition of growth of Chinese hamster ovary cells by guanyl diamines. *J. Biol. Chem.* **269**:27827-27832, 1994.
39. McCaffrey, T.A., Pomerantz, K.B., Sanborn, T.A., Spokojny, A.M., Du, B., Park, M.H., Folk, J.E., Lamberg, A., Kivirikko, K.I., Falcone, D.J., Mehta, S.B. and Hanauske-Abel, H.M. Specific inhibition of eIF-5A and collagen hydroxylation by a single agent: antiproliferative and fibrosuppressive effects on smooth muscle cells from human coronary arteries. *J. Clin. Invest.* **95**:446-455, 1995.
40. Wolff, E.C., Lee, Y.B., Chung, S.I., Folk, J.E. and Park, M.H. Deoxyhypusine synthase from rat testis: purification and characterization. *J. Biol. Chem.* **270**:8660-8666, 1995.
41. Lee, Y.B., Wolff, E.C., Park, M.H. and Folk, J.E. Diamine and triamine analogs and derivatives as inhibitors of deoxyhypusine synthase: synthesis and biological activity. *J. Med. Chem.* **38**:3053-3061, 1995.
42. Kang, K.R., Wolff, E.C., Park, M.H., Folk, J.E., and Chung, S.I. Identification of *YHR068w* in *Saccharomyces cerevisiae* as a gene for deoxyhypusine synthase: expression and characterization of the enzyme. *J. Biol. Chem.* **270**:18408-18412, 1995.

43. Joe, Y.A., Wolff, E.C., and Park, M.H. Cloning and expression of human deoxyhypusine synthase cDNA: structure-function studies with the recombinant enzyme and mutant proteins. *J. Biol. Chem.* **270**:22386-22393, 1995.
44. Lee, Y.B., Joe, Y.A. and Park, M.H. Inhibitors of hypusine biosynthesis: potential anticancer agents. *J. Biomed. Res.* **5**: 46-52, 1995.
45. Park, M.H., Joe, Y.A., Kang, K.R., Lee, Y.B. and Wolff, E.C. The polyamine-derived amino acid hypusine: its posttranslational formation in eIF-5A and its role in cell proliferation. *Amino Acids* **10**:109-121, 1996.
46. Lee, Y.B. and Park, M.H. Inhibitors of deoxyhypusine synthase: structural features and biological study. *Proc. 7th KSEA Northeast Regional Conf.* : pp 95-99, 1996.
47. Wolff, E.C., Folk, J.E., and Park, M.H. Enzyme-substrate intermediate at lysine-329 of human deoxyhypusine synthase. *J. Biol. Chem.* **272**:15865-15871, 1997.
48. Park, M.H., Lee, Y.B. and Joe, Y.A. Hypusine is essential for eukaryotic cell proliferation. *Biol. Signals* **6**:115-123, 1997.
49. Joe, Y.A., Wolff, E.C., Lee, Y.B., and Park, M.H. Enzyme-Substrate Intermediate at a Specific Lysine Residue is Required for Deoxyhypusine Synthesis: the Role of Lys<sup>329</sup> in Human Deoxyhypusine Synthase. *J. Biol. Chem.* **272**:32679-326785, 1997.
50. Park, M.H., Joe, Y.A. and Kang, K.R. Deoxyhypusine synthase activity is essential for cell viability in the yeast *Saccharomyces cerevisiae* *J. Biol. Chem.* **273**:1677-1683, 1998.
51. Liao, D.-I., Wolff, E.C., Park, M.H. and Davies, D.R. Crystal Structure of the NAD complex of human deoxyhypusine synthase: an enzyme with a ball and chain mechanism for blocking the active site. *Structure* **6**:23-32, 1998.
52. Wolff, E.C. and Park, M.H. Identification of Lysine<sup>350</sup> of yeast deoxyhypusine synthase as the site of enzyme intermediate formation. *Yeast* **15**:43-50, 1999.
53. Lee, Y.B., Joe, Y.A., Wolff, E.C., Dimitriadis, E.K. and Park, M.H. Complex formation between human deoxyhypusine synthase and its protein substrate, the eIF5A precursor *Biochem. J.* **340**: 273-281, 1999.
54. Wolff, E.C, Wolff, J. and Park, M.H. Deoxyhypusine synthase generates and uses bound NADH in a transient hydride transfer mechanism. *J. Biol. Chem.* **275**:9170-9177, 2000.